improved significantly and the use of DES were shown to be cost-effective. The 6-month total medical cost for DES and BMS were similar.

PMD6

READMISSION RATES AND COSTS ASSOCIATED WITH FIBRIN SEALANT USE AMONG PATIENTS UNDERGOING ORTHOPEDIC SURGERY

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OBJECTIVES: Payers and hospital administrators are increasingly concerned about readmission rates in surgical patients. We sought to examine the readmission rates and hospital costs associated with EVICEL fibrin sealant (all-human formulation), versus VITAGEL fibrin sealant (with bovine thrombin), or no adjunct hemostat use for patients undergoing inpatient joint replacement surgeries. **METHODS:** A retrospective analysis was conducted using Premier administrative data from over 500 US hospitals. Hospitalized patients (≥18 years) who underwent orthopedic surgery and received EVICEL, VITAGEL or no hemostat during surgery between January 1, 2009 and November 30, 2009 were identified. A 1:1 (EVICEL:VITAGEL) and 1:3 (EVICEL: no hemostat) match was conducted using surgery type and propensity scores of receiving EVICEL, based on patient and hospital characteristics via a logistic regression model. The outcomes included 30-day all-cause readmission rates and total index hospital costs. Differences in readmission rates were analyzed using conditional logistic regression. A generalized linear model with log-link/gamma distribution was used for analyzing differences in total costs. **RESULTS:** A total of 316 patients were identified (158 per cohort) for the EVICEL versus VITAGEL and 1,808 patients for EVICEL (n=452) versus no hemostat (n=1,356) analysis. Patients in the VITAGEL cohort were 6.8 times more likely to be readmitted to the hospital compared to the EVICEL cohort (12.7% vs 3.8%; OR=6.81, 95%CI 1.62, 28.66). Patients in the no hemostat cohort were 1.6 times more likely to be readmitted compared to the EVICEL cohort. Total index hospital cost was lower for the EVICEL cohort ($16,704) compared to VITAGEL cohort ($18,192 p<0.001) on average. The EVICEL cohort ($17,387) had similar total costs compared to no adjunct hemostat ($17,389) cohort. **CONCLUSIONS:** Readmission presents significant costs and has been added to hospital quality measures. In this study, EVICEL was associated with lower readmission rates compared to VITAGEL or no adjunct hemostat use in inpatient joint replacement surgeries.

PMD7

DIFFERENCES IN OUTCOMES MEASURES OF DIABETES PATIENTS USING AN INSULIN DEVICE AND A CONVENTIONAL HUMAN INSULIN VIAL/SYRINGE

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OBJECTIVES: To compare the main outcomes differences including clinical events, health care utilization and costs of patients using an insulin device for diabetes versus patients using the conventional human insulin vial/syringe. **METHODS:** Using a retrospective analysis of health insurance claims data between the years 2003 and 2008, we identified patients with a diagnosis of diabetes and then divided them into an insulin device cohort and a human insulin vial/syringe cohort, based on their prescription fills. Patients' demographics, health care visits and costs were compared using Chi-square testing and standardized differences. The 12-month follow-up clinical event rates, health care facility use and costs for those patients were compared. Risk adjustment was performed using the propensity score matching method with the ProbChoice™ algorithm. **RESULTS:** A total of 12,400 eligible patients were identified as using insulin for diabetes: 1,236 (9.97%) received the insulin device and 11,164 (90.03%) received the insulin vial/syringe. Compared with patients who received the conventional human insulin vial/syringe, patients in the insulin device group were likely to be younger, live in the Midwest of the United States, and have type I diabetes. Although there were no significant differences in hypoglycemic events after risk adjustment, patients in the insulin device group had significantly fewer cases of cerebrovascular disease (4.14% vs. 9.12% p=0.0055), congestive heart failure (7.18% vs. 12.15% p=0.0267) and chronic obstructive pulmonary disease (4.70% vs. 10.50% p=0.0039), but more cases of dyslipidemia (68.51% vs. 54.42% p=0.0002). Although the outpatient costs for office visits ($1888 vs. $1895 p=0.0257) were lower for patients on the insulin device, their prescription costs ($5489 vs. $4635 p<0.0001) were higher. The overall risk-adjusted healthcare costs did not differ ($14,231 vs. $18,096 p=0.1160) between the two groups. **CONCLUSIONS:** Without significant addition to the costs, insulin administration with the device is associated with fewer clinical events.

PMD8

POSITRON EMISSION TOMOGRAPHY SCREENING FOR LUNG CANCER: A SYSTEMATIC REVIEW

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OBJECTIVES: There is no established effective lung cancer screening modality. Positron Emission Tomography (PET) is helpful in lung cancer disease extent evaluation. The objective of our study is to evaluate the role of PET in lung cancer screening via systematic review. **METHODS:** Using a strategy similar to a previous computed tomography (CT) lung cancer screening systematic review [Black et al. Thorax 2007;62:131–138], we searched for primary studies focusing on PET screening for lung cancer using the following keywords "(lung cancer) AND (positron emission tomography) AND ((screen) OR (screening))" in Pubmed® on Nov 30th, 2010. Two reviewers (Chien C.R. & Wang H.N) reviewed all the identified studies independently to find out studies compatible with our inclusion/exclusion criteria. Further discussion with 3rd reviewer (Kao C.H.) was taken to reach conclusion when there was any disagreement among the reviewers. Manual searching for relevant studies was also performed from the included studies. We restricted our analysis to non-overlapped studies published since 2000 and in English. **RESULTS:** Among the identified studies (n=2733), 239 studies were published before 2000, 2440 studies were excluded due to irrelevant titles and keywords, and another 34 studies were excluded after reviewing the abstracts. Full paper evaluation led to further exclusion of 11 studies, and manual search led to inclusion of 2 additional studies, leaving 11 studies for analysis. No studies evaluated the efficacy of primary PET screening specific for lung cancer. Eight studies focused on primary PET screening for cancer, and three studies reported finding in lung cancer CT screening programs with selective PET. **CONCLUSIONS:** The role of primary PET screening for lung cancer remains unknown. PET has the potential to be used as a screening modality not specific for lung cancer and as a selective modality in combination with CT for lung cancer screening. [1] Black et al. Thorax 2007; 62:131-138

PMD9

ESTIMATION OF QUALITY-ADJUSTED LIFE EXPECTANCY AND LOSS OF QUALITY-ADJUSTED LIFE EXPECTANCY IN PATIENTS UNDER PROLONGED MECHANICAL VENTILATION: A POPULATION-BASED STUDY DURING 1998-2007 IN TAIWAN

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OBJECTIVES: The quality-adjusted life expectancy (QALE) and loss of quality-adjusted life expectancy (loss of QALE) in patients under prolonged mechanical ventilation (PMV) stratified by different underlying diseases were determined. **METHODS:** A simple random sample of all 171, 635 patients who were performed continual mechanical ventilation for more than 21 days during the 1997-2007 periods in Taiwan left us 50,481 subjects. After stratifying the patients according to specific diagnoses, we performed latent class analysis (LCA) to categorize PMV patients with multiple comorbidities into several clustered groups. The survival functions were estimated for each group with Kaplan-Meier method and extrapolated to 300 months to obtain the life expectancies through a semi-parametric method. The results were adjusted with a utility measurement of quality of life to estimate the QALE (quality-adjusted life expectancies). Further, we compared the age-, gender-matched reference populations to calculate the loss of QALE. **RESULTS:** The QALE of PMV patients with chronic renal failure were 0.42 and 0.19 quality-adjusted life years (QALY) for consciousness clear versus unclear states, respectively; those of patients with cancer were 0.48 and 0.22, respectively; those of patients with Parkinson's disease were 0.62 and 0.27, respectively; those of patients with liver cirrhosis were 0.98 and 0.43 respectively; those of patients with stroke were1.03 and 0.46 respectively; those of patients with degenerative neurological diseases were 1.47and 0.64 respectively; those of patients with injuries and poisoning were1.81 and 0.78 respectively. The LCA classified cases with multiple comorbidities into several categories, of which there was a consistent trend of decrease in QALE and loss of QALE as people grow old. **CONCLUSIONS:** The results could hopefully reduce the gap between patients' families and health care providers and assist the clinical and health policy decisions.

PMD10

SCREENING TREATMENT AND CONTROL OF HYPERTENSION IN DIABETIC PATIENTS USING OUTPATIENT VISIT DATA

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OBJECTIVES: Blood pressure control is a great challenge in the diabetic patient population since the blood pressure target is lower, <130/80, as compared to <140/90 in general population. The objective of this study was to examine the rate and the association of patient characteristics (demographic, access to health care and clinical factors) and practice characteristics with hypertension screening, treatment and control in diabetic population. **METHODS:** National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey 2006 were used to analyze outpatient visits made by adults18 years and older diagnosed with diabetes. Descriptive analysis was done to find the rate and binary logistic regression was carried out to find the predictors. Statistical significance was set at alpha of 0.05. **RESULTS:** Hypertension screening, treatment and control rate was 66.9%, 53.1% and 28.4% in diabetic patients. The odds of not getting screened were visits other than primary care physician (OR7.52), with no diagnostic tests (OR6.63), having no co morbidities (OR3.64), non obese (OR1.72) and increasing age (OR2.03, OR2.35, OR2.72). Odds of not being treated were settings located in south geographic region (OR1.29), provider other than primary care physician (OR2.02), hospital setting (OR1.28), no diagnostic tests (OR1.97) and having no co morbidities (OR1.558). Odds of not having blood pressure control were greater for black race (OR 1.75), patients with no past visits (OR 1.79), obese (OR 1.37) and having no co morbidities (OR 1.40). **CONCLUSIONS:** The study found that although more than 50% of the diabetic patients were screened and treated, blood pressure control was found in only one third of the population. Both the patient factors; demographic, access to health care, clinical factors and practice characteristics were responsible for poor quality of care (hypertension screening and treatment) and poor outcome (blood pressure control).

Medical Device/Diagnostics – Cost Studies

PMD11

IDENTIFYING POTENTIAL DRIVERS OF COST SAVINGS WITH INSULIN ADMINISTRATION DEVICES IN TYPE-2 DIABETES IN THE UNITED STATES

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